



App-Based Workers Speak:

*Studies Reveal Anxiety,
Frustration, and a Desire
for Good Jobs*

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Introduction

All of us deserve meaningful work that provides us with the stability and security to thrive as individuals and families, and to build thriving communities and a healthy democracy. For nearly a century, workers have fought for a foundation of rights and protections for all workers. In the last decades, many workers have won higher minimum wages, secure scheduling, paid sick and safe time, and paid family leave in jurisdictions across the United States.

But not all working people are protected by labor rights. Digital labor platform companies such as Uber, Lyft, DoorDash, and Instacart have, ever since their founding during the Great Recession, told their workers that they have no rights as workers, and have dedicated enormous resources to carve them out from labor laws that form a baseline for other workers.¹ The companies' extensive lobbying efforts led half the states to exempt them mainly or entirely from complying with any state laws whatsoever related to employee rights.²

Digital labor platform companies like Uber, Lyft, DoorDash, and Instacart are actively lobbying and marketing for a workplace that forces workers to accept jobs with only a sliver of the baseline rights and protections other workers have.³ To back their lobbying and marketing agenda, the companies have funded unscientific surveys, often using misleading questions, and cited the results as evidence that app-based workers are successful, profitable entrepreneurs when the reality is most are barely making ends meet.

This brief provides a roundup of more than a dozen scientific surveys of workers, voters, and taxpayers, as well as independent reviews of data supplied or required by law from "gig" companies, as defined above, on the wages and

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working conditions of digital labor platform jobs in the United States. We supplement those findings with community-based reports and the voices of workers themselves.

This brief is meant to illustrate the real experiences of app-based workers via worker stories and scientific studies, and to counteract the false narratives being pushed by the companies. We call for universal labor rights for all those who work for a living.

Who works for app-based companies?



I work in restaurants and catering on top of driving for Uber and Instacart. It might seem like being controlled by an algorithm would mean Black people would be treated more fairly, but it just hides the low wages and customer abuse.

—Chris White, driver and president of Philadelphia Drivers Union

Black and Latinx workers provide a disproportionate share of digital labor platform work in the United States. Bureau of Labor Statistics data show that Black and Latinx workers make up almost 42 percent of workers for Uber, Lyft, and other “electronically mediated work” companies, although they comprise less than 29 percent of the overall U.S. workforce.



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Who works for app-based companies?

State-based surveys tell the same story:

- In New York City, 9 out of 10 (86%) app-based ride-hail drivers are immigrants, with half coming from the Dominican Republic, Haiti, Pakistan, India and Bangladesh. Forty-six percent of the overall workforce in New York City is foreign-born (Parrott and Reich 2018).
- In San Francisco, nearly 80 percent of app-based ride-hail and delivery workers are people of color, and a majority are immigrants (Benner et al. 2020). Approximately 61 percent of the overall workforce are people of color (NELP analysis of U.S. Census Bureau, Quarterly Workforce Indicators, First Quarter of 2020) and 32 percent are immigrants (NELP analysis of pooled American Community Survey microdata, 2015-2019). A supplemental San Francisco survey of delivery workers alone found that 76 percent were people of color (Benner et al. 2020, Delivery only).
- In King County, Washington, which includes Seattle, 23 percent of app-based ride-hail drivers are Black, compared to 5 percent of all workers, and drivers are three times more likely to be immigrants than all workers (Parrott and Reich 2020).
- In Los Angeles County, 23 percent of drivers for Uber and Lyft are Black, compared to only 8 percent of the general population (UCLA 2018).
- In New York City, a study of app-based workers found 27 percent of Latinx workers had participated in app-based work over the course of a year, compared to 18 percent of white workers (Lew et al. 2021).
- A study of delivery workers in New York found that most are from minority and marginalized groups within immigrant communities (Figueroa 2021).

U.S. history is rife with instances in which business elites and policymakers exclude Black and Latinx workers from core labor standards or shunt workers of color into a narrow set of low-paying jobs.⁴ It is in this context that we examine the real conditions for workers in app-dispatched jobs.

How much do app-based workers actually make?



It varies from week to week. One week maybe \$1,000, next week maybe \$300. I'm with multiple apps. Not just DoorDash, not just Shipt. It's also GoPuff, Favor, etc. Some weeks I am only able to work to survive.

—Veronica Barnes, driver and member of Gig Workers Rising

Sub-minimum wages

Ever since Uber claimed that its drivers could earn up to \$90,000 annually, the company—and other “gig” companies—have exaggerated worker pay.⁵ They have done so in part by failing to account for the expenses that their business model pushes onto workers, and by failing to pay workers for as much as 50 percent of working time.

Government and company-supplied (but independently analyzed) data, as well as worker surveys, reveal that app-based workers often earn less than the minimum wage and that some app-based workers' real wages have declined over time.

The table below provides real earnings of select app-based workers.

Geography	Median earnings after expenses
Seattle ⁶ app-based ride-hail (Parrott and Reich 2020)	\$9.73/hour ⁷
Chicago app-based ride-hail (Manzo and Bruno 2020)	\$12.30/hour ⁸
New York City ⁹ app-based ride-hail (Parrott and Reich 2018)	\$14.17 (Uber) ¹⁰ \$13.35 (Lyft)
New York City ¹¹ app-based delivery (Figueroa et al. 2021)	\$7.94/hour
National app-based ride-hail (Uber only) (Mishel 2018)	\$9.21/hour ¹²
National app-based ride-hail (Zoepf 2018)	\$3.37 ¹³ to \$8.55/hour ¹⁴¹⁵

What are the real earnings of app-based workers?

Every independent study has found that gig workers are

PAID

minimum or subminimum wages.

\$9.21 per hour*
after expenses

*According to one national study of Uber drivers



The San Francisco Bay Area survey measured income on a weekly rather than hourly basis and found that ride-hail drivers earned \$360 after expenses, with delivery workers earning \$224. The study concluded that one in five workers might be earning nothing after expenses (Benner et al. 2020).

Informal surveys confirm the results of those noted above. A 2019 review of 1,400 receipts by the membership group Working Washington found that Instacart workers were earning \$7.66 per hour, after deducting mileage and payroll taxes borne by workers.¹⁶ In the same year, an ethnographic study based on 416 rides for both Uber and Lyft in Denver, Colorado found that drivers' real earnings averaged \$6.88 per hour, with 61 percent making less than minimum wage after expenses¹⁷ (Henao et al. 2017).

There is, as well, evidence that drivers' earnings are declining over time. Chase and Company Institute researchers found in 2016 that earnings declined 23 percent from 2013 to 2015; earnings of drivers who drove 10 out of 12 months or more went from \$1,277 to \$762.¹⁸ Recent surveys during the COVID-19 pandemic have also noted deep declines in wages. In the Bay Area, 54 percent of delivery workers surveyed had lost more than \$500/233k in earnings over the course of the pandemic (Benner et al. 2020).

Unemployment was particularly stark during the pandemic. A JPMorgan Chase review of family income from online platform work during the pandemic found that transportation and delivery workers, the lowest-income of all platform workers, are particularly vulnerable to economic shocks, and recommended strengthening the social safety net for contingent workers (JPMorgan Chase, 2021).

How much do app-based workers make after waiting time and expenses?



DoorDash base pay and tips have gone down drastically during the pandemic. I know DoorDash has admitted taking tips from drivers in the past and I'm afraid DoorDash is taking money that belongs to me. This is money I need for food, rent, and school. This year, many times I got offers for two deliveries for \$8. That means going to two different restaurants, waiting for orders, then making deliveries to two separate buildings. I don't get paid for parking, for time spent waiting, or for wear and tear on my car. If I don't accept low-paying deliveries, my score on the DoorDash app goes down. A lower score means I could be paid less money, or get worse deliveries, or even be deactivated with no warning.

—Saori Okawa, driver and member of We Drive Progress

Worker surveys and scholarly data analysis find that workers spend huge amounts of working time waiting for an assignment. A 2019 survey of six major U.S. regions, funded by ride-hail companies, found that drivers spend on average only 54 to 62 percent of their time with a passenger in the car (Fehr and Peers 2019).¹⁹

In Seattle, a more recent survey found that drivers have passengers in their car only 49 percent of the time they are on the street (Parrott and Reich 2020). In New York, that number is 58 percent for Uber and Lyft (Parrott and Reich 2018). In Chicago, drivers have passengers in the car only 55 percent of their working time (Manzo and Bruno, 2020). In San

Francisco, ride-hail drivers spend almost 15 minutes of every hour waiting for an assignment (Benner et al. 2020).

A second survey in San Francisco, focused on delivery workers during COVID, found that workers spend about 20 minutes of every hour waiting for orders and driving to pick them up (Benner et al. 2020, Delivery only).

Expenses can cut income in half

Since they are characterized as independent contractors, app-based ride-hail and delivery workers bear all of the expenses of their job and must additionally pay both the employer and employee share of federal payroll taxes. A nationwide study of tax returns found that gig workers report gross annual income of about \$20,000 but have about \$14,000 in expenses, for a net gain of only \$5,700 per year (Jackson et al. 2017).²⁰

In Seattle, study authors found that, after expenses of \$11.80 per hour, 90 percent of workers were not being paid the applicable minimum wage of \$16.39 per hour (Parrott and Reich 2020). In New York, after expenses of \$8.54 per hour, 85 percent of drivers were not making a minimum pay standard designed to pay a \$15 minimum wage (Parrott and Reich 2020). Among San Francisco delivery drivers, researchers found as many as 12 percent might be earning nothing after expenses (Benner et al. 2020, Delivery only). Similarly, one national study found that, after expenses, 41 to 54 percent of ride-hail drivers were making less than minimum wage, with 4 to 8 percent losing money (Zoepf 2018).

Companies have often argued that they should not be responsible for driver expenses, as drivers are using their personal vehicles and would incur expenses of owning a car regardless of whether they were labor platform workers.

But several surveys of drivers asked whether the driver purchased or leased a car in order to work as an app-dispatched driver or delivery person. In Los Angeles, 36 percent of ride-hail drivers either bought or leased a car in order to drive (UCLA 2018). In Seattle, more than 83 percent of full-time drivers purchased their car primarily or partly to provide ride-hail services (Parrott and Reich 2020). Similarly, in New York, 80 percent of drivers acquired their vehicle to enter the industry and would risk losing their investment if they switched to working in another industry (Parrott and Reich 2018).

Over a course of years, Uber entices drivers to purchase cars by operating a subprime leasing program. That program, which included deducting car payments from workers' earnings, has been discontinued,²¹ but the company still operates a car leasing program.²²



How much do app-based workers make with tips?



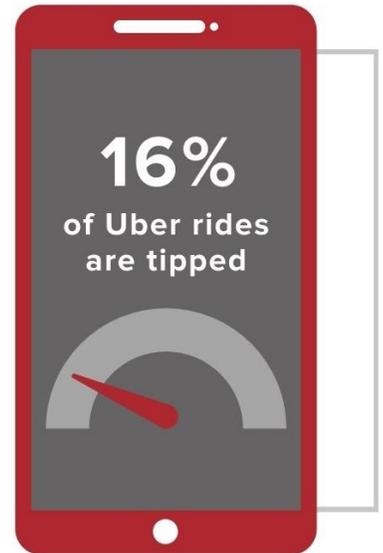
All the apps have learned to blame the system for the tip debacle. Because where is the tip? They use my miles for the tip money.

—Veronica Barnes

While app-based workers rely on tips to make ends meet, a nationwide tipping field experiment, including 40 million observations of people engaged in routine tipping behavior, found that only 16 percent of Uber rides are tipped, and that as riders take more Uber trips, they tip even less frequently (Chandar et al. 2019).

The study found that when the same rider is matched with the same driver multiple times, riders tip more frequently. But app-based companies typically forbid workers to engage in longer-term relationships with customers. A recent review of company data in Illinois found that only 14 percent of trips result in a tip for the drivers, and that during the pandemic, tips fell from \$0.81 to \$0.49 per trip (Manzo and Bruno 2020).

Only one survey, of delivery drivers in San Francisco during COVID, found that workers earn substantial tips, accounting for 30 percent of estimated earnings (Benner et al. 2020, Delivery only).



Gig work is my primary source of income. But I have seen a steady degradation in my compensation since I started working in 2019. My work is heavily subsidized by customer tips. Without them, it would not be sustainable.

—Willy Solis, member of Gig Workers Collective

In order to increase earnings potential, drivers have used a number of strategies: in San Francisco, workers reported that they often or sometimes sleep in their cars (31 percent ride-hail drivers, 38 percent delivery workers). Some work on multiple platforms to make ends meet: a review of 2.3 million Chase checking accounts found that 20 percent of drivers use multiple platforms (JPMorgan Chase 2018). In Seattle, 52 percent of ride-hail drivers drive for more than one app (Parrott and Reich 2020). In Chicago, 18 percent of ride-hail drivers engage in “multi-apping” (Manzo and Bruno 2020). In California, 66 percent of respondents to a worker survey drive for more than one platform (National Equity Atlas/Rideshare Drivers United 2021). In New York, while most food couriers work multiple apps to make ends meet, they do not work simultaneously on more than one app, since company policies impede them from doing so (Figueroa 2021).

How do workers view flexibility?



We drive under the constant threat of one bad week, one car repair, one illness away from missing a rent payment or putting food on the table. If I have to stop driving to go to a doctor's appointment, I don't get paid sick days, I just have to work extra to make up for the lost time. After I pay my expenses, I barely make ends meet. At the age of 61, I'm worried if I will ever be able to retire.

—Mike Robinson, driver and member of Mobile Workers Alliance

App-based workers value the small degree of flexibility they have. In Los Angeles, 37 percent of drivers say they choose to drive because of flexibility. Yet, app-based workers say they work because they need to, not because they want to, and more information is emerging about how workers view the trade-offs that the companies offer between stability and flexibility.

An online survey conducted by Axios and Survey Monkey in 2019 found that 79 percent of people surveyed said they would rather have one stable full-time job than more than one job with the option to choose how and when you want to work, with a variation of only three points across gender, age, and race. Republicans were slightly more likely than Democrats—81 percent versus 77 percent—to choose the one stable full-time job option (Axios/Survey Monkey 2019).



76% First generation immigrant workers

72% Latinx workers

68% Black workers

Contract workers overwhelmingly prefer permanent employment.

More recently, polling by the global management consultant firm McKinsey & Company finds that contract, freelance, and temporary workers would overwhelmingly prefer to have permanent employment (McKinsey & Company 2021). This sentiment was most pronounced among first-generation immigrant (76%), Latinx (72%), Asian American (71%), and Black (68%) respondents. And a survey of New Yorkers found that they choose app-based work because they face challenges in finding employment with stable hours and benefits, not necessarily because they prefer gig work: 57 percent of app-based workers said they preferred to have an employer who sets their schedule and provides benefits (Lew et al. 2021).

Is app-based work a side hustle or a full-time job?



I've been driving for Uber and Lyft for about two years and depend on my rideshare income to support myself and my teenage son. Despite working full-time, it's difficult to make enough money to pay for basic necessities like rent, food, and the cost of my vehicle. This means that benefits that most employees take for granted, like health insurance, are luxuries that I can't afford.

—Neide Tameirão, driver and member of Mobile Workers Alliance

Companies have, for years, argued that the jobs they offer especially benefit stay-at-home parents, students, and others who need to work around care and study schedules, and who crave the flexibility of app-dispatched work and use it to pick up a little extra income, not as a primary source of income.

It is true that in many markets the companies rely on an army of part-time workers and the workforce is subject to frequent turnover. But data from workers and the companies' own records show that most app-based work is done by full-time workers. Data from the Bureau of Labor Statistics indicates that more than two-thirds (69%) of digital labor platform workers put in full-time hours, either from their app based work alone, or in combination with other work (BLS 2018).

In Los Angeles, 71 percent of workers are full time. Gig work is the primary source of income for two-thirds of them, and the sole source of income for half (UCLA 2018). In New York City, 60 percent of workers are full time, and platform work is the primary source of income for over half (Parrott and Reich 2018). In Seattle, one-third of drivers work full time (Parrott and Reich 2020). Nearly 6 out of every 10 New Yorkers who engage in the app-based economy depend on this type of work as their main source of income (Lew et al. 2021).



All of the apps boast about flexibility, but its only helpful if there are fair paying orders being offered when I'm available. The amount of hours and the specific hours I would need to work to support myself and my family on this full-time would be unreasonable.

—Robin Page, member of Gig Workers Collective

Platform work is the sole source of income for 72 percent of full-time drivers (Parrott and Reich 2020). In San Francisco, 52 percent of delivery workers were full time, and 57 percent of workers said that platform work was their entire income in the month of the survey (Benner et al. 2020, Delivery only). For San Francisco ride-hail and delivery workers combined, 71 percent work full time hours, with 53 percent of workers saying that platform work was their entire income (Benner et al. 2020).

In New York, about two-thirds of delivery workers work six days or more a week and more than six hours on any day of the week, with 85 percent saying delivery is their main and only job. Only 12 percent of drivers worked three days a week or less (Figueroa 2021).

Some of the surveys also indicate whether workers are supporting families on their earnings from app-based work. In Los Angeles, 35 percent of surveyed workers support families (UCLA 2018). In San Francisco, 46 percent support others, including 33 percent who are supporting children (Benner et al. 2020). In New York, 50 percent of taxis and for-hire vehicle drivers are supporting one or more children (Parrott and Reich 2018).

How many app-based workers receive public assistance?

Some survey data also show the extent to which workers' earnings, and the companies' reluctance to provide government-mandated benefits, result in reliance on public sources of support—or no support at all.



How many app-based workers receive Medicaid?



- In Los Angeles, 20 percent of workers said they received some form of public assistance (UCLA 2018). A COVID-era survey found that the number of workers receiving food stamps, housing assistance, Social Security, Women Infants and Children assistance, TANF, or other forms of public assistance had increased from 15 percent to 25 percent in San Francisco (Benner et al. 2020). Forty percent of app-based workers in New York receive SNAP benefits, three times higher than the share of other self-employed workers and employees receiving this benefit (Lew et al. 2021).
- A recent survey of 500 drivers in California, 65 percent of whom are people of color, found that 29 percent rely on Medi-Cal. Sixteen percent—double the national average—are uninsured (National Equity Atlas/Rideshare Drivers United 2021).
- In New York, 49 percent of couriers surveyed said they had been in an accident while doing a delivery. Of these, 75 percent said they paid for medical care with their own money (Figuroa 2021).

Workers are highly likely to receive Medicaid: New York (40%), Seattle (37%), Bay Area (ride-hail and delivery, 30%; delivery only 31%). Many others are uninsured: New York (16%), Seattle (27%), San Francisco (ride-hail and delivery, 21%; delivery only 15%).



I was denied the Prop 22 healthcare stipend by Uber because I'm on Medical. It's not fair—what I was promised by Prop 22 was a lie. I want what I was promised, and I want to be treated like a human being by my employers. There is absolutely no reason why companies like Uber, DoorDash, Instacart, and others cannot simply disburse the healthcare stipend to every driver who meets the criteria. They should be ashamed of their efforts to make it even more difficult for suffering drivers like me to get medical care I need. I'm not just a number, I'm a person and I deserve to be treated fairly and humanely by these wealthy corporations.

—Lucas Chamberlain, driver and member of We Drive Progress

Are app-based workers getting the benefits the companies promised under California's Prop 22?

When digital labor platform companies spent over \$200 million dollars to pass Proposition 22 in California, they promised workers' benefits would increase. But two recent surveys show that the companies, which promised partial health care subsidies to California drivers as part of their campaign, are not fulfilling their health care promise (Mobile Workers' Alliance 2021). A Mobile Workers Alliance survey showed that the vast majority—86 percent—of California app-based drivers would never see that benefit. Drivers also report mass confusion regarding the health care benefit, with 66 percent reporting they had not been given enough information from their employers about how to even apply for the stipend, and 60 percent reporting they have not been given adequate information about which drivers are eligible.

Similarly, a survey of 500 California workers found that only 10 percent of drivers are receiving a stipend, while 40 percent have either never heard of the stipends or were not sure whether they had received notification (National Equity Atlas/Rideshare Drivers United 2021).

Are app-based workers protected by laws that prohibit anti-discrimination, harassment, and unfair treatment?

When asked if they had been mistreated or humiliated while working for the apps, surveyed delivery workers in New York City reported 509 incidents. Most workers believed it was discrimination due to their immigration status, or their race, ethnicity, or language (Figueroa 2021).

Because they treat workers as independent contractors, labor platform companies argue that their workers are not covered by many states' anti-discrimination laws. Workers report that they have suffered discrimination and harassment by passengers but that they feel pressured to keep silent and get good reviews because they fear deactivation.

Companies use consumer “star” rating systems to evaluate workers, and workers who fail to achieve a certain level of “stars” can be deactivated. Extensive social science research finds that consumer-sourced rating systems are highly likely to be influenced by bias on the basis of factors such as race or ethnicity.²³

In one early ethnographic study, drivers expressed frustration and anxiety about their ratings because drivers were often not able to identify what, if anything, had changed in their performance.²⁴

Later studies have confirmed that drivers may submit to unlawful discrimination or other unfair treatment in order to preserve their jobs. In San Francisco, 43 percent of ride-hail drivers and 24 percent of app-dispatched delivery workers say they have felt harassed or made to feel unsafe by a customer, with 51 percent of delivery and 36 percent of ride-hail workers saying jobs offered were affected by ratings (Benner et al. 2020). Ten percent of workers have been deactivated, and 60 percent of these say the process was unfair. In Los Angeles, 55 percent of ride-hail drivers report that they feel pressured to get good reviews, with 30 percent afraid of deactivation (UCLA 2018).

What do workers want?

App-based workers are missing out on foundational labor rights like minimum wages, expense reimbursement, and anti-discrimination protection. So why do company surveys show that they want to retain “independent contractor” status?

One answer may be that simply asking someone whether they want to be an “employee” or an “independent contractor” is meaningless without context that explains what the two terms mean legally. A second may be that the companies have written surveys that skillfully exploit the widespread desire of all workers to work independently and be their own boss.

For example, a recent survey told drivers that if they were classified as employees, the companies would be required to provide benefits, but “drivers would also be required to

What workers need and want are universal labor rights, well enforced: good pay, ample benefits, and the right to organize, on par with what all employees receive.

work a set schedule, report to a boss, have a flat hourly wage, and could only driver for one company.”²⁵ This is false. While the law would require companies to provide benefits (plus a minimum wage, plus protection against discrimination, plus a protected right to organize), no law has ever required businesses to require workers to work a set schedule or work for only one company. These are choices that companies make, and they amount to threats to workers that

companies will take away the thing they most appreciate about app-based work.

Scholar Veena Dubal has conducted extensive ethnographic research that shows how potent that threat is.²⁶ Based on 50 in-depth interviews and years of experience with drivers' advocacy groups, as well as a survey of 214 surveys, Dubal found that less than half of the drivers preferred employee status. When asked why, drivers equated employee status with a mandate against scheduling flexibility. Dubal found that drivers' ambivalence was informed by the insecurities of their work: they want the benefits of being an employee, but they fear how the companies might behave as employers.

While a majority of drivers who indicated a preference for employee status, 79 percent stated they wanted the security and/or benefits that come with employment. Of those who preferred to be treated as independent contractors, 67 percent stated that this answer was informed by a need or desire for scheduling flexibility and/or autonomy on the job.

Some worker surveys also ask workers whether they want to be "employees," often in the context of what benefits they want from their jobs. In the Los Angeles surveys, over half of workers said they want to be employees. Eight out of 10 said they want to belong to a workers' organization, and 55 percent want a set hourly wage. Overwhelming majorities said they wanted workers' compensation, health insurance, overtime pay, unemployment insurance, and paid sick days—all traditional benefits associated with employment. Similarly, in the Bay Area survey, almost 70 percent of delivery and transportation network workers say they want workers' compensation, unemployment insurance, and health and safety protections. Three-quarters of San Francisco delivery drivers said they might or did want representation by a workers' organization (Benner, Delivery).

Conclusion

Both independent surveys and workers themselves have confirmed: app-based jobs offer low and fluctuating pay, and substantial risk of no income. Company practices leave workers without any form of paid time off or compensation in the event of accident, injury, or unemployment. Discrimination is built into the algorithms. Against this treatment, companies fight any worker-led efforts to collectively negotiate with them. Even in California, where companies promised a set of meager benefits to workers, they have failed to follow through.

What workers need and want are universal labor rights, well enforced: good pay, ample benefits, and the right to organize, on par with what all employees receive. Policymakers and public agencies should enforce existing rights, strengthen them, and avoid falling prey to misleading company narratives about job quality and company pitches for substandard rights and benefits for these workers.

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Endnotes

- 1 We define “digital labor companies” as companies that use internet-based technology platforms, accessible via personal computing devices like smartphones, to coordinate and manage on-demand piecework in a variety of service industries, from taxi to food delivery to domestic work.
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- 6 Online survey by over 6,500 ridehail drivers, summary data from Uber via the city.
- 7 Expenses included were vehicle purchase and operating costs, insurance, maintenance, fuel, driver’s license fees, business license fees, vehicle registration fees, vehicle inspection fees, and a vehicle excise tax, health insurance and independent contractor taxes.
- 8 Expenses include vehicle expenses reported by AAA, gasoline prices published by the U.S. Department of Energy, and payroll taxes. 2019 numbers are used, since 2020 wages were artificially inflated during the pandemic. Authors did not consider financing costs, license fees and registration fees.
- 9 Based on data collected by the Transportation and Limousine Commission.
- 10 Expenses included one-time upfront costs, recurring costs like license renewal, vehicle registration; operating costs based on expenses for a late model five seat sedan, insurance, fuel costs, mileage.
- 11 Survey of 500 app-based delivery workers, with additional interviews and focus groups. Expenses include e-bikes, unlimited data cell phones, garage rental for recharging batteries, safety equipment, safety tools and paying tickets.
- 12 Expenses include insurance, maintenance and repair costs, depreciation, and fuel, and take into account tax treatment of mileage costs, employer side payroll taxes, workers’ comp and unemployment insurance premiums, and modest health, life insurance and retirement payments.
- 13 Survey of 1100 drivers. Expenses include fuel, insurance, maintenance, repairs and depreciation.
- 15 Jonathan Hall, Uber’s research director, claimed in a Medium article that the original MIT CEEPR study had a “flawed methodology” that resulted in hourly earnings below previous studies (Hall 2018). In response, one of the MIT CEEPR study’s authors, Stephen Zoepf of Stanford University’s Center for Automotive Research, issued revised estimates of Uber wages, using two methods and Uber median net profits, to ranging from \$8.55 to \$10.00. The Economics of RideHailing Revisited, <http://ceepr.mit.edu/files/papers/2018-005%20Authors%20Statement.pdf>.
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- 17 Expenses were based on three driving expense scenarios, the first assuming no costs of purchase of a car, the second the AAA

- standard and the third the IRS reimbursement standard. The mean range between the three scenarios was \$5.73 to \$10.46 per hour.
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